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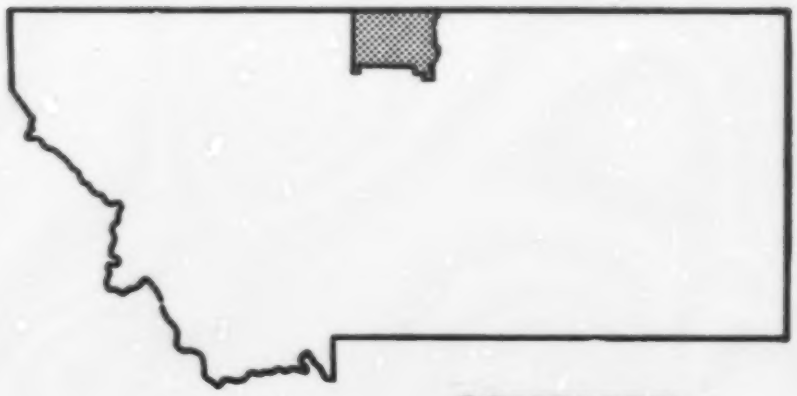
(76)

FLOOD INSURANCE STUDY

HILL COUNTY, MONTANA AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
HINSHAW, TOWN OF	300095
UNINCORPORATED AREAS	300153



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JUNE 3, 1988

COMPLETED

Federal Emergency Management Agency

ORIGINAL

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

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Flood Insurance Rate Map

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FLOOD INSURANCE STUDY
HILL COUNTY, MONTANA AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the geographic area of Hill County, Montana, including the incorporated City of Havre and the incorporated Town of Hingham (hereinafter referred to collectively as Hill County), and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations (CFR) at 44 CFR, Part 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence; and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by the U.S. Geological Survey (USGS), Helena, Montana, for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. IAA-EMW-85-E-1823, Project Order No. 24. This study was completed in September 1986.

1.3 Coordination

An initial community coordination meeting was held on April 2, 1985, to determine the streams to be studied by detailed methods. The meeting was attended by representatives of the community, the USGS, and the Montana Department of Natural Resources and Conservation.

On April 8, 1987, the results of this study were reviewed and accepted at a final coordination meeting attended by representatives of the study contractor, FEMA, and the community.

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2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the geographic area of Hill County, Montana. The area of study is shown on the Vicinity Map (Figure 1).

The City of Havre, located along the southern bank of the Milk River, is protected by levees which were determined to contain a 100-year flood, and therefore is considered to be a non-floodprone community.

The following streams in Hill County were studied by detailed methods and were selected with priority given to all known flood hazard areas and areas of projected development or proposed construction through 1992:

- Milk River was studied from a point approximately 2.4 miles upstream from the bridge on Federal Aid Secondary (FAS) Highway 232 to a point approximately 5.5 miles downstream from the bridge.

- Big Sandy Creek was studied from a point approximately 130 feet downstream of U.S. Highway 2 for a reach of approximately 3.2 miles upstream.

- Beaver Creek was studied from U.S. Highway 2 to a point approximately 2,500 feet upstream of U.S. Highway 87, a reach of approximately 4.1 miles.

2.2 Community Description

Hill County is located in north-central Montana. The county is bordered to the east by Blaine County, to the west by Liberty County, to the south by Chouteau County, and to the north by Canada.

According to the U.S. Census, the 1980 population of Hill County was 17,985. The largest city within the county, which is also the county seat, is Havre, which had a 1980 population of 11,309. The only other incorporated community in Hill County is the Town of Hingham, which had a 1980 population of 186 (Reference 1).

2.3 Principal Flood Problems

The largest known floods on the Milk River recorded at the USGS stream-gaging station located at the bridge on FAS Highway 232 were 20,000 cubic feet per second (cfs) on April 12, 1899; 11,000 cfs on June 9, 1908; and 11,400 cfs on April 3, 1952. The waterflow has been regulated in this reach since 1939 by Fresno Reservoir, which is 17 miles upstream from Havre. These floods, using the frequency curve which reflects effects of regulation, had recurrence intervals of approximately 100 years (20,000 cfs) and 25 years (11,000 cfs).

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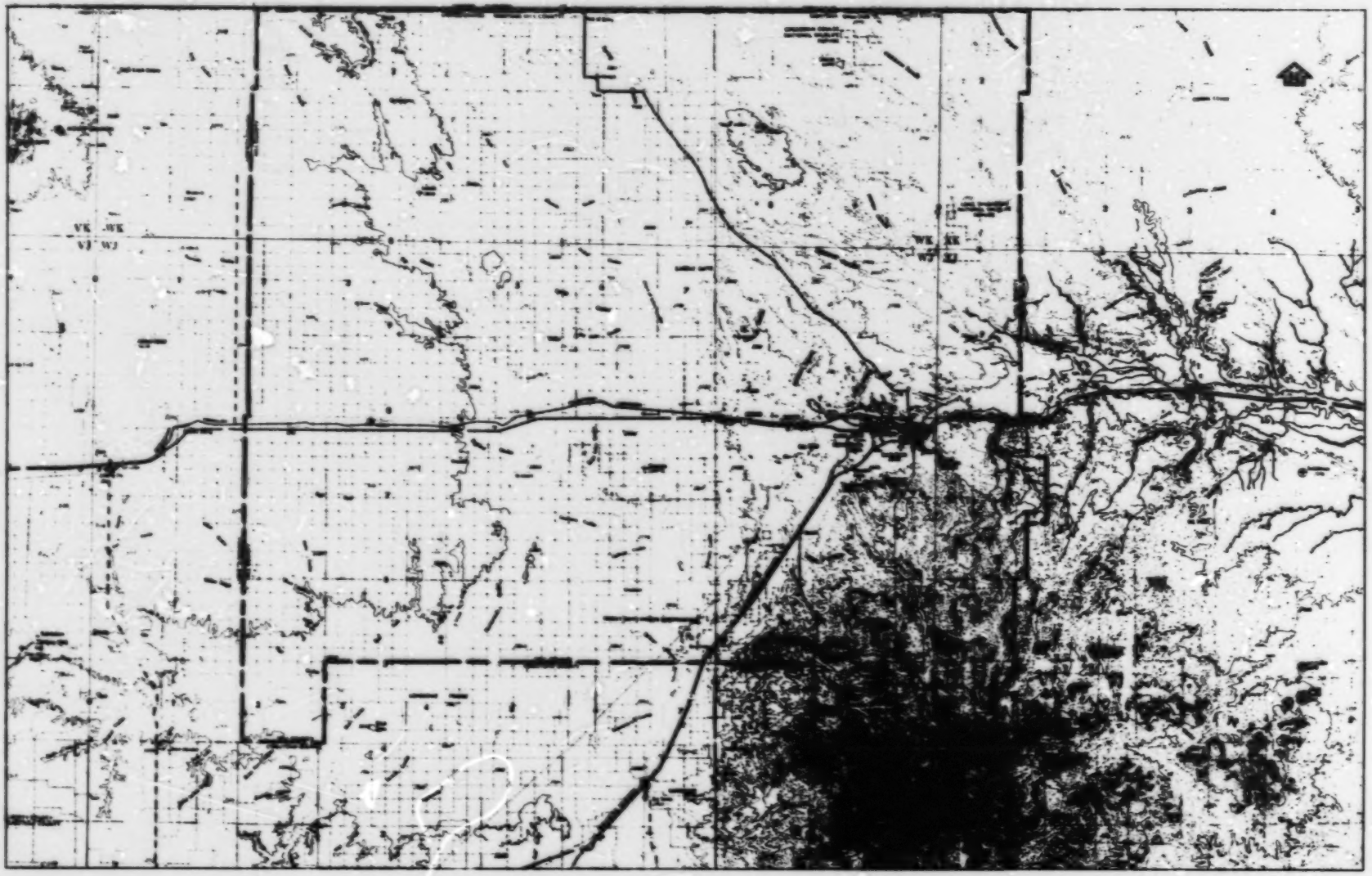

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILL COUNTY, MT
(AND INCORPORATED AREAS)

APPROXIMATE SCALE

10.5 0 10.5 21 31.5 MILES

VICINITY MAP

The Milk River is also affected by ice during winter periods and ice jams during spring breakup. The maximum observed ice-affected stage at the USGS gaging station at Havre for the period of record is about 2 feet lower than the 1899 peak flood elevation of 2,480.41 feet.

Big Sandy Creek had large peak discharges on April 3, 1952, and March 30, 1978. The peaks recorded at a USGS stream-gaging station, which is 2 miles upstream from the study area, were 5,570 cfs and 6,000 cfs. The recurrence interval of these floods is approximately 25 years.

Flooding problems on Beaver Creek are due primarily to overbank flow, with the main channel in most places being insufficient to contain the 100-year flood. There is no record of flow for Beaver Creek, but local residents have reported seeing the stream overflowing its banks.

2.4 Flood Protection Measures

High flows of the Milk River are confined on both banks by levees that were completed by the U.S. Army Corps of Engineers in 1957. The levees, located just north of the City of Havre, are earthfill, with a 10-foot top width and 2:1 side slopes. Their ability to withstand floodflows has not been tested, but hydraulic computations indicate that they will contain a 100-year flood.

Fresno Reservoir, which was completed by the U.S. Bureau of Reclamation in 1939, will probably reduce the effect of any flood in the Havre area for floods originating upstream of the reservoir. The Fresno Reservoir is primarily used for storage of irrigation water. The flow of Beaver Creek is slightly regulated by a small reservoir (Lower Lake) 10 miles upstream of the study area, but regulation was considered to be minor for the 100-year flow analysis. At present, Beaver Creek and Big Sandy Creek have no flood protection.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk

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flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied in detail affecting the county.

For the Milk River, the 100-year discharge was based on a USBR analysis for the design of Fresno Reservoir and adjusted to the drainage area at the study site. Discharge-frequency relationships were developed at Fresno Reservoir, and the 100-year discharge was transferred from the reservoir to the study site using the following transfer equation developed by Omang, Parrett, Charles, and Hull (Reference 2):

$$\hat{Q}_t = \left\{\frac{A_u}{A_g}\right\}^{0.53} \cdot Q_t$$

where

$\hat{Q}_t$ = flood magnitude being estimated, in cfs;

A_u = drainage area at ungaged site, in square miles;

A_g = drainage area at gaged site, in square miles; and

Q_t = flood magnitude at gaged site, in cfs.

The transfer method will give reasonably accurate results when the ungaged drainage area does not differ from the gaged area by more than approximately 50 percent. In this example, the drainage area at the study site (5,844 square miles) differs from the drainage area at the reservoir (3,766 square miles) by 35.6 percent.

For Big Sandy Creek, the 100-year flood discharge was determined based on a statistical analysis of peak discharge records at a USGS gaging station, Big Sandy Creek near Assiniboine (Station 06139500), which is 2 miles upstream from the study area. Twenty-two years of record are available at this gaging station, and additional historical floods were included in the analysis to effectively extend the period of flood record to 40 years. The recorded and historical floods were analyzed by the standard log-Pearson Type III method as recommended in Bulletin 17B of the U.S. Water Resources Council (Reference 3).

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For Beaver Creek, the 100-year flood discharge was determined using equations developed by Omang, Parrett, Charles, and Hull (Reference 2). These equations relate regional basin characteristics to regional streamflow characteristics. Basin characteristics found to be significant were drainage area and mean January minimum temperature. The results were compared with regional relationships of peak discharge and drainage area for nearby stream-gaging stations and were found to be reasonable.

Peak discharge-drainage area relationships for the 100-year recurrence interval were determined for Milk River, Big Sandy Creek, and Beaver Creek, and are shown in Table 1.

TABLE 1. SUMMARY OF 100-YEAR DISCHARGES

Flooding Source	Drainage Area (Square miles)	100-year Peak Discharge (cubic feet per second)
Milk River		
At FAS Highway 232 in Havre	5,844	20,900
Beaver Creek		
Near U.S. Highway 2	121	3,070
Big Sandy Creek		
Near U.S. Highway 2	1,814	11,700

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

The hydraulic characteristics of streams in the county were analyzed to provide estimates of the elevation of the 100-year flood along each stream studied in the county.

For the backwater analyses on the Milk River, 14 cross sections were obtained from a field survey. Structural geometry and elevations for one bridge were obtained from a field survey. For Big Sandy Creek, eight cross sections were obtained from a field survey, and one was synthesized. Structural geometry and elevations for one bridge were obtained. For Beaver Creek, 21 cross sections were obtained from a field survey and 2 were synthesized. The synthesized cross sections were estimated from adjacent surveyed sections and topographic maps. Structural geometry and elevations for four bridges and road sections also were obtained from the field survey. Cross sections were located upstream and downstream from bridges so the backwater effects of these structures could be computed.

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Channel roughness factors (Manning's "n") used in the hydraulic computations were chosen based on engineering judgment of onsite observations of the floodplain areas. The Milk River has main channel roughness values ranging from 0.03 to 0.04 and overbank roughness values ranging from 0.04 to 0.07. Big Sandy Creek has main channel roughness values ranging from 0.035 to 0.045 and overbank roughness values ranging from 0.04 to 0.05. Beaver Creek has main channel roughness values ranging from 0.035 to 0.045 and overbank roughness values ranging from 0.035 to 0.150.

Water-surface elevations for the 100-year flood were computed by WSPRO, a step-backwater computer program developed by the USGS for the Federal Highway Administration (Reference 4). The starting water-surface elevations for the three streams studied were determined by the slope-conveyance method. The routed flow elevation for the Milk River at the bridge in Havre checked within 0.2 foot of the 100-year elevation at the USGS gaging station at the FAS Highway 232 bridge. Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for the 100-year flood (Exhibit 1). Locations of selected cross sections used in the hydraulic analyses are also shown on the flood profiles.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the National Geodetic Vertical Datum (NGVD) of 1929. Elevation reference marks used in this study are shown on the maps; the descriptions of the marks are presented in Elevation Reference Marks (Exhibit 3).

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages state and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study provides 100-year flood elevations and delineations of the 100- and 500-year floodplain boundaries and 100-year floodway to assist communities in developing floodplain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2 percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the 100-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24,000, with a contour interval of 10 feet (Reference 5).

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The 100-year floodplain boundaries are shown on the Flood Insurance Rate Map (Exhibit 2). On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE). Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

Approximate 100-year floodplain boundaries in some portions of the study area were taken directly from the Flood Hazard Boundary Map (Reference 6).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced.

No floodways were computed for Hill County flooding sources.

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

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Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 500-year floodplain, areas within the 500-year floodplain, areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols the 100-year floodplain and the locations of selected cross sections used in the hydraulic analyses.

The current Flood Insurance Rate Map presents flooding information for the entire geographic area of Hill County. Previously, separate Flood Hazard Boundary Maps and/or Flood Insurance Rate Maps were prepared for each identified flood-prone incorporated community and the unincorporated areas of the county. Historical data relating to the maps prepared for each community are presented in Community Map History (Table 2).

7.0 OTHER STUDIES

No other studies concerning water-surface elevations for streams studied by detailed methods in Hill County were found.

Due to its more detailed hydraulic analyses, this Flood Insurance Study supersedes the previously printed Flood Hazard Boundary Map for Hill County, Montana (Reference 6).

Approximate Flood Hazard Boundary Maps for Blaine County, Montana, dated September 2, 1980, are in complete agreement with this Flood Insurance Study (Reference 7).

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COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP	EFFECTIVE DATE (S) OF MAP/PANEL REVISIONS
Havre, City of [1]	N/A	N/A	June 3, 1988	
Hingham, Town of	July 11, 1975	None	June 3, 1988	
Unincorporated Areas	February 21, 1978	None	June 3, 1988	

[1]Non-floodprone Community

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TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILL COUNTY, MT
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Chief, Natural and Technological Hazards Division, FEMA, Denver Federal Center, Building 710, Box 25267, Denver, Colorado 80225-0267.

9.0 BIBLIOGRAPHY AND REFERENCES

1. U.S. Department of Commerce, Bureau of the Census, General Population Characteristics, Montana, 1983.

2. Omang, R. J.; Parrett, Charles, and Hull, J. A.; Methods for Estimating Magnitude and Frequency of Floods in Montana Based on Data Through 1983: U.S. Geological Survey Water-Resources Investigations Report 86-4027, 1986.

3. U.S. Water Resources Council, "Guidelines for Determining Flood Flow Frequency," Bulletin 17B, 1981.

4. Shearman, J. O.; Kirby, W. H.; Schneider, V. R.; and Flippo, H. N.; Bridge Waterways Analysis Model/Research Report, Federal Highway Administration, FHWA-RD-86/108, 1986.

5. U.S. Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 feet: Havre, Montana (1964), Havre SE, Montana (1964), and Herron Park, Montana (1970).

6. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Hill County, Montana, February 21, 1978.

7. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Blaine County, Montana, September 2, 1980.

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EXHIBIT 3 - ELEVATION REFERENCE MARKS
HILL COUNTY, MONTANA AND INCORPORATED AREAS

Reference Mark	Elevation (feet NGVD)	Description of Location
RM 1	2460.912	A standard disk, stamped "Reset 1964" and set in the top of a concrete post projecting 7 inches above the ground is located 6.5 miles east of Havre, Hill County, along the Burlington Northern Railroad, 200 feet north of roadside park along U.S. Highway 2, 3,400 feet west of Little Boxelder Creek.
RM 2	2468.20	A railroad spike driven into a power pole is located 5.0 miles east of Havre, Hill County, along the Burlington Northern Railroad, 1,750 feet west of section line, Sec. 36, T. 33 N., R. 16 E.
RM 3	2471.47	Downstream crown of corrugated metal culvert is located 4.2 miles east of Havre, Hill County, along the Burlington Northern Railroad, at culvert on access road to dairy farm, 90 feet north of railroad track.
RM 4	2470.58	A lag bolt driven into a power pole is located 3.5 miles east of Havre, Hill County, along the Burlington Northern Railroad, 600 feet east of private driveway to Brough property, 60 feet north of railroad track.
RM 5	2473.47	A lag bolt driven into a power pole is located 2.6 miles east of Havre, Hill County, along the Burlington Northern Railroad, 1,200 feet east of private driveway to Green property, 60 feet north of railroad track.
RM 6	2488.26	Top of west streamward side of concrete railroad bridge abutment above "1923" sign on north end of bridge is located 2 miles east of Havre, Hill County, along the Burlington Northern Railroad.
RM 7	2483.33	Top of chiseled "X" in concrete foundation for gate turnout is located 1.3 miles east of Havre, Hill County, 57 feet north of Burlington Northern Railroad track, by large Centennial grain elevator.

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EXHIBIT 3 - ELEVATION REFERENCE MARKS (cont.)
HILL COUNTY, MONTANA AND INCORPORATED AREAS

Reference Mark	Elevation (feet NGVD)	Description of Location
RM 8	2493.43	Check bar for USGS wire-weight gage is located on upstream side of bridge over the Milk River at Havre, Hill County, on PAS Highway 232.
RM 9	2480.47	Top of concrete wingwall for gate turnout is located at the Milk River at Havre, Hill County, on right upstream side of bridge over the Milk River.
RM 10	2485.96	A standard disk, stamped "Corps of Engineers" and set in top of concrete platform for gate turnout is located 65 feet west of bridge over the Milk River at Havre, Hill County, on right upstream corner of gate turnout.
RM 11	2484.55	A lag bolt driven into a power pole is located 2,400 feet west of bridge over the Milk River at Havre, Hill County, along the Burlington Northern Railroad, 35 feet north of railroad track.
RM 12	2483.78	A lag bolt driven into a fence post located 1.7 miles west of bridge over the Milk River at Havre, Hill County, along the Burlington Northern Railroad, 500 feet north of track, 50 feet north of dike.
RM 13	2528.91	Upstream crown of left corrugated metal culvert is located 0.35 mile west of Pacific Junction, Hill County, along U.S. Highway 2, at left culvert on Beaver Creek crossing of U.S. Highway 2.
RM 14	2556.66	Steel peg in railroad bridge is located 1.8 miles southwest along the Burlington Northern Railroad from the station at Pacific Junction, Hill County, in right upstream wingwall of bridge over Beaver Creek.
RM 15	2554.972	A standard disk, stamped "B93 1934" and set in the top of a concrete post is located 2 miles southwest along the Burlington Northern Railroad from the

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EXHIBIT 3 - ELEVATION REFERENCE MARKS (cont.)
HILL COUNTY, MONTANA AND INCORPORATED AREAS

Reference Mark	Elevation (feet NGVD)	Description of Location
		station at Pacific Junction, Hill County, opposite mile post 2 about 300 yards south of a bridge, 68 feet east of the centerline of the track, and 8 feet west of the right-of-way fence.
RM 16	2588.93	Top of nut in railroad bridge is located 3.1 miles southwest along the Burlington Northern Railroad from the station at Pacific Junction, Hill County, in left downstream bridge deck.
RM 17	2587.80	A standard disk, stamped "2586 HAVRE" and set in a concrete post projecting 2 feet above the ground is located 3.25 miles southwest along the Burlington Northern Railroad from the station at Pacific Junction, Hill County, 13 feet east of the centerline of the track.
RM 18	2583.732	A standard disk, stamped "C 93 1934" and set in the top of a concrete post is located 4 miles southwest along the Burlington Northern Railroad from the station at Pacific Junction, Hill County, about 93 yards west of milepost 4, 47 feet south of the centerline of the track, and 4 feet north of the right-of-way fence.
RM 19	2601.73	A chiseled "X" square painted red is located at old bridge 300 feet north of bridge on U.S. Highway 87 crossing Beaver Creek, 7 miles southwest of Havre, Hill County, on left downstream abutment.
RM 20	2512.92	Top of abutment is located at U.S. Highway 2 bridge over Big Sandy Creek, 6.1 miles west of Havre, Hill County, on left downstream abutment.
RM 21	2514.80	A lag bolt driven in a fence post is located 6.1 miles west of Havre, Hill County, then 0.8 mile south of U.S. Highway 2 bridge over Big Sandy Creek, 1.5 feet above ground, 90 feet south of cottonwood tree on east bank.

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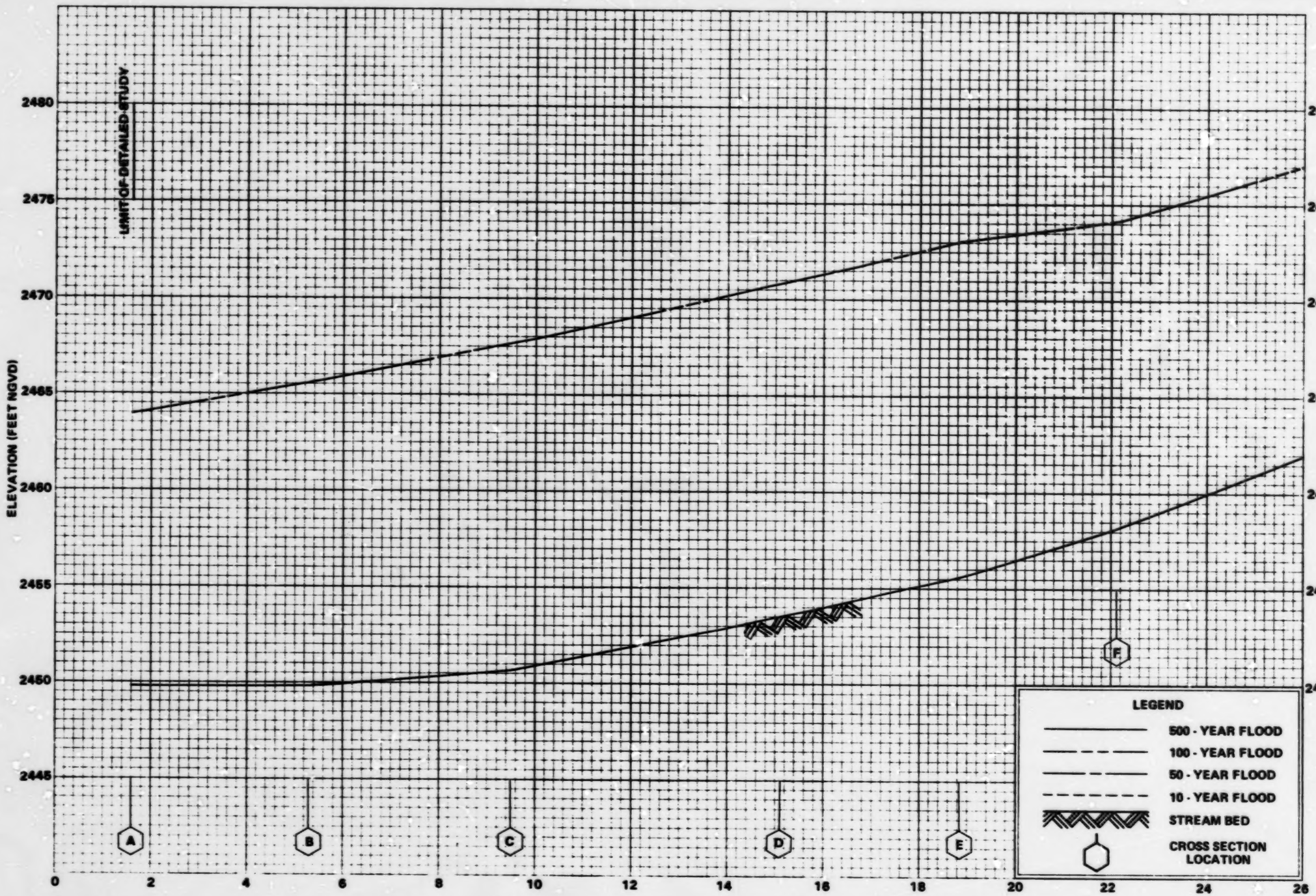

FLOOD PROFILES

MILK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILL COUNTY, MT
AND INCORPORATED AREAS

01P

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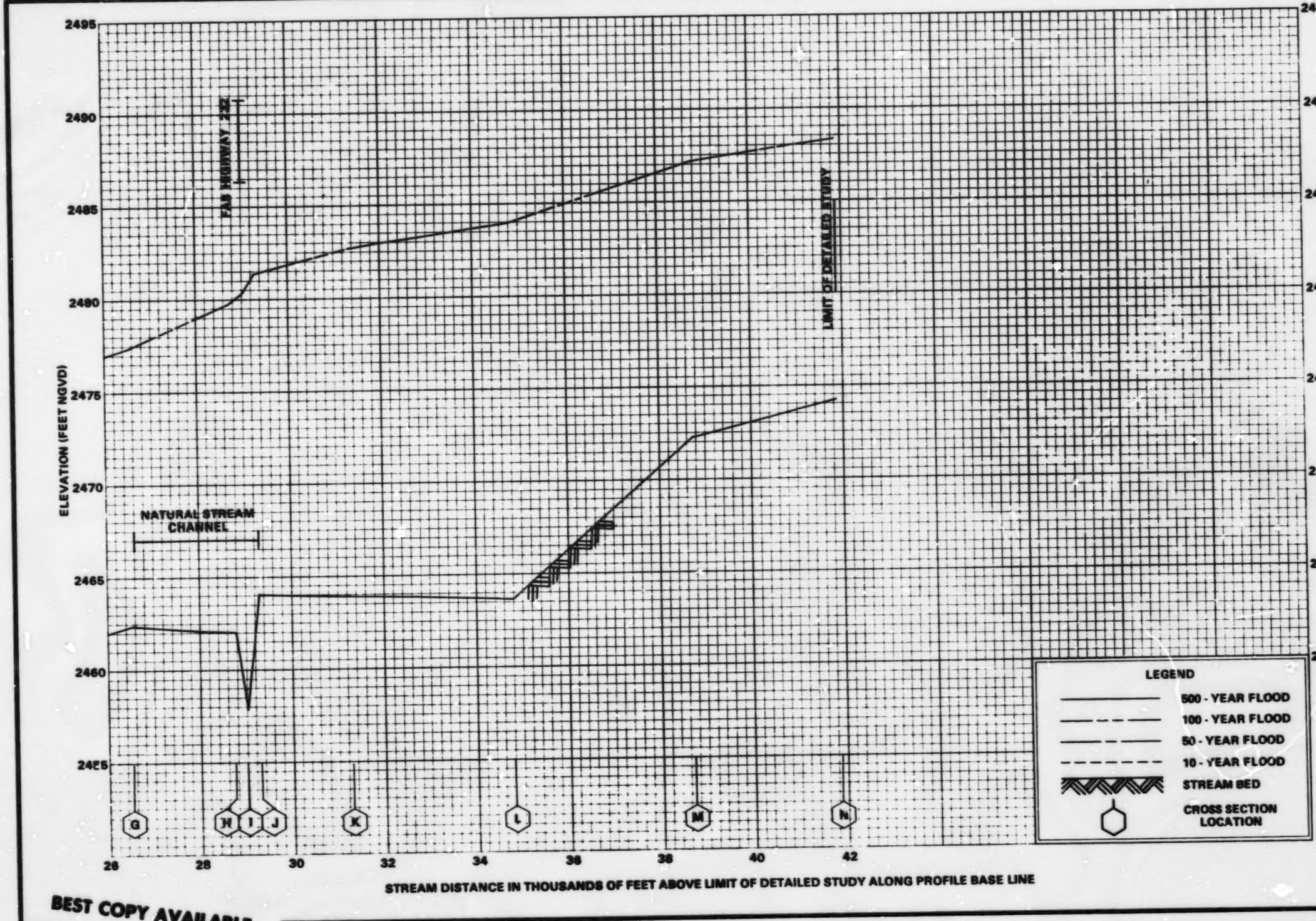

FLOOD PROFILES

MILK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILL COUNTY, MT
AND INCORPORATED AREAS

02P

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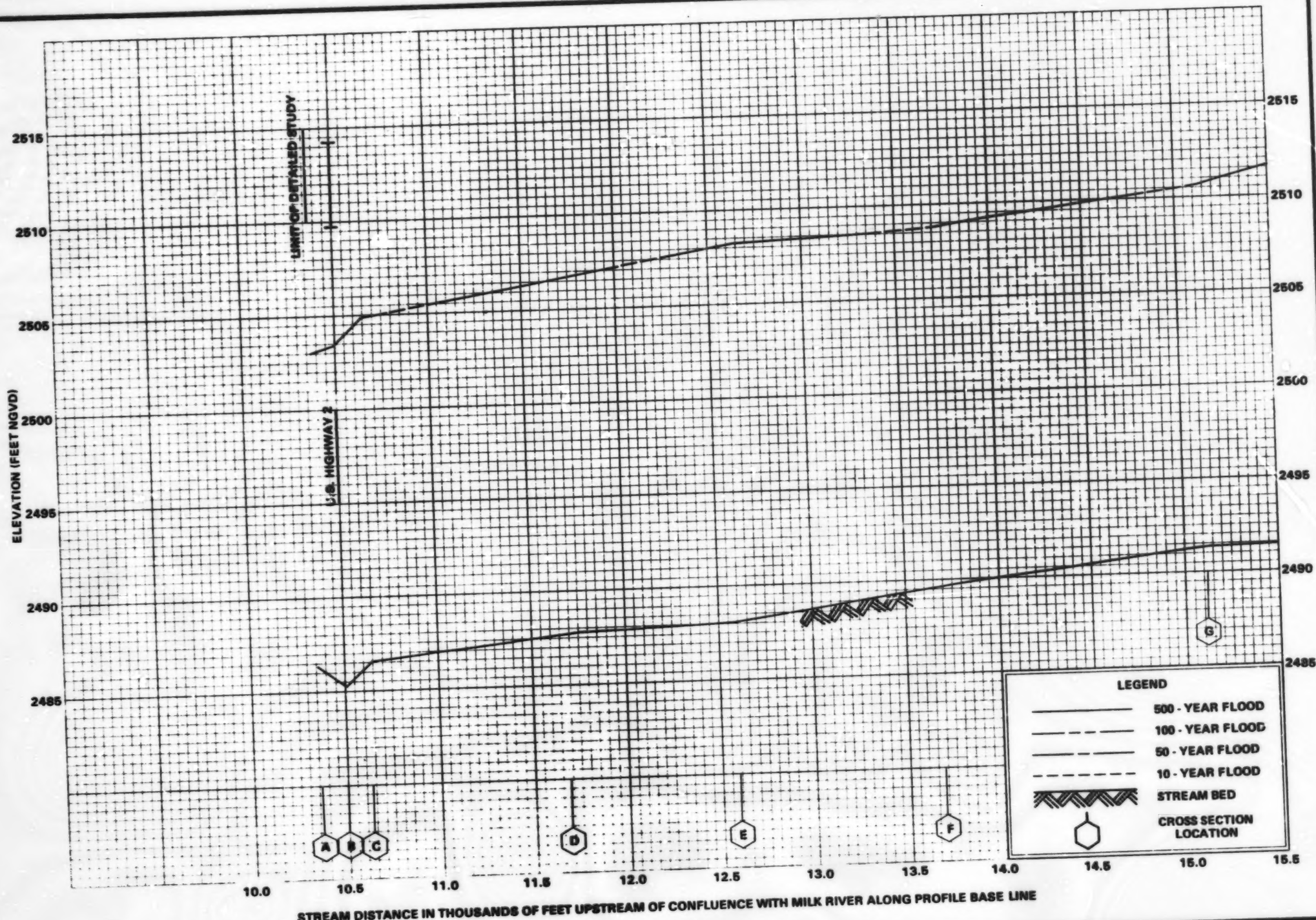

FLOOD PROFILES

BIG SANDY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILL COUNTY, MT
AND INCORPORATED AREAS

03P

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FLOOD PROFILES

BIG SANDY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILL COUNTY, MT
AND INCORPORATED AREAS

04P

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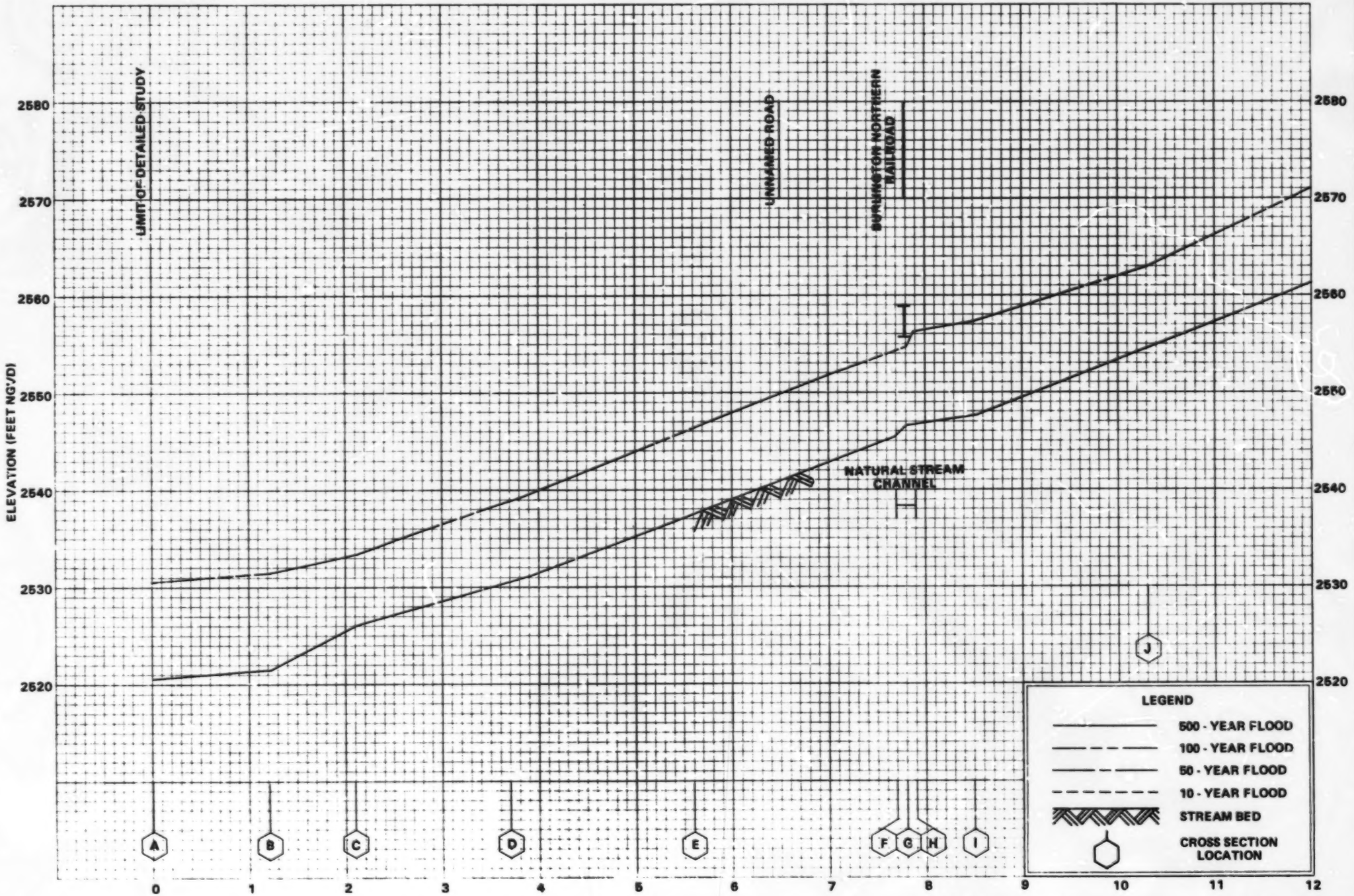

FLOOD PROFILES

BEAVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILL COUNTY, MT
AND INCORPORATED AREAS

05P

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FLOOD PROFILES

BEAVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILL COUNTY, MT
AND INCORPORATED AREAS

06P

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